

John G. Jack, in Garden and Forest, vol. X., page 394, has given a most interesting account of damage by this insect to the willows in the Arnold Arboretum. The damage there by the beetle is not exceptional, for the writer has noticed similar injuries in many of the larger nurseries in Eastern Massachusetts. In fact, some of our nurserymen are contemplating abandoning entirely the cul-

ture of poplars and willows because of the damage caused by this insect. The matter of remedies being still under consideration the writer has recommended so far, in the case of infested shade trees, only the destruction of the trees in June and a replanting with the silver maple (*Acer dasycarpum*) or its variety, *Weirii*, either of which makes a good growth in damp localities.

A GENERIC TABLE OF THE FAMILY PANURGIDAE: A REPLY
TO MR. COCKERELL'S CRITIQUE ON THE SEGREGATION OF PERDITA COCKERELL.

BY WILLIAM H. ASHMEAD, WASHINGTON, D. C.

In Psyche for January 1899, Mr. Cockerell has made some criticisms on my segregation of the genus *Perdita* Cockerell, which seem to require a reply.

Now, I think the whole trouble with Mr. Cockerell is expressed in his opening sentence: "*I hardly know what to say about Mr. Ashmead's three new genera, established in Psyche pp. 284-285 at the expense of Perdita*"; and, had he waited a little longer and given himself more time to investigate the subject a little more thoroughly, I am convinced he would have been better able to have said something more to the point.

Perdita Smith, in my paper, is not defined, and the fact that Smith based his genus upon a specimen without maxillary and labial palpi has nothing to do with the validity of the genus *Cockerellia*.

The genus *Perdita* Smith, however, has been recognized, and while the labial palpi do not agree exactly with the imaginary figure of Smith's, there is still some resemblance, and the labial palpi are sufficiently different, according to my views, to readily distinguish it from *Cockerellia*; besides the other characters mentioned by Smith hold good, and these, as well as other differences between it and *Cockerellia*, will be brought out in my generic table given below.

Mr. Cockerell surely must be wrong when he says the male of *P. hyalina* or *albipennis* has the claws simple and the abdomen not banded! I have examined a great many *males* of this species and all have the claws cleft, and the abdomen banded. If Mr. Cockerell possesses a specimen without these

characters, it probably represents some other species in another genus.

I quite agree with all good systematists that color *alone* is not of generic value; but Mr. Cockerell, with others, must surely admit that it is of great value and assistance in recognizing certain genera when used with salient structural characters. The genus *Philoxanthus* was not based upon color alone as Mr. Cockerell intimates, and as he may readily see if he will again consult my description.

Mr. Cockerell seems loath to see *Perdita*, upon which he has done so much work, split up into subgenera, although inspired evidently by my beginning he does not hesitate to propose the generic name "*Perditella*" for what he calls "a really good subgenus" for his *Perdita larreae*, *marcialis* and *larrearum*. As so frequently occurs in Mr. Cockerell's work, as for instance in his subgeneric divisions of the Coccidae, he has not given a single essential character for the recognition of this genus. The only character given, namely, "second submarginal cell small, triangular" will not hold good for the three species mentioned, while the so-called large stigma is essentially the same as found in *Perdita* and *Cockerellia*, although it appears to Mr. Cockerell's eyes larger on account of the smallness of the marginal cell.

Perditella however, may possibly be retained for *larrea*, *marcialis*, and *luteola*. It is singular however, that all of the specimens of these species that I have

yet seen are males, and, I suspect, they may really represent the opposite sex of *Philoxanthus*. In the latter event the characters made use of in my table will then be of sexual and not generic value.

Mr. Cockerell sums up his remarks by saying: "I do not say that *Perdita* should not be divided into two or more genera; probably it will ultimately have to be split into half a dozen but it will be necessary to proceed with caution."

This is just about the number of genera I have recognized.

"Proceed with caution," is good advice, and it is a pity Mr. Cockerell has not followed it himself before erecting some of his recent new bee genera since most of them will be found to be synonyms. I find no less than four in the following group: *Hemihalictus* Ckll. equals *Dufourea* Lepeletier, *Hesperaspis* Ckll. equals *Rhophitoides* Schenck, *Callandrena* Ckll. equals *Biareolina* Dufour, while *Pseudopanurgus* Ckll. equals *Panurginus* Nylander.

In order to show how *Perdita* and allied genera are separated, I have concluded to publish my MS. generic table of the family Panurgidae, which is as follows:—

Table of Genera.

Marginal cell at apex more or less remote from the costa or obliquely, broadly truncate.	5
Marginal cell towards apex acuminate, attaining the costa.	

- Abdomen usually rather long; second joint of hind tarsi normal, inserted in the middle of the first 2
- Abdomen subglobose, black, shining, with white fasciae at apex; second joint of hind tarsi angulate beneath, not inserted in the middle of the first; clypeus in ♂ yellow, the hind femora incrassated; antennae in both sexes filiform, longer than the head; tongue short. *Macropis* Panzer.
2. Body, and more particularly the thorax, distinctly pubescent, the abdomen with white fasciae 3
- Body sparsely pilose, the abdomen always glabrous, shining, not fasciate, although the anal segment is slightly ciliate at apex.
- Transverse median nervure interstitial, or very nearly; antennae in ♂ longer than the thorax, the joints of flagellum nodose beneath, appearing crenulate; hind tibiae with knee plate present in both sexes. *Halictoides* Nylander.
- Transverse median nervure not interstitial, joining the median vein *before* the basal nervure; antennae not longer than the thorax, the flagellum simple; maxillary palpi 6-jointed, the joints subequal; labial palpi 4-jointed, the first joint the longest, about as long as 2-3 united, the third longer than 2-4. *Dufourea* Lepeletier. (= *Hemihalictus* Ckll.)
3. Submedian cell usually shorter than the median or never longer, the transverse median nervure joining the median vein *before* the origin of the basal nervure, or interstitial with it 4
- Submedian cell a little longer than the median, the transverse median nervure joining median vein *beyond* the origin of the basal nervure.
- Thorax above with fulvous or ferruginous hairs; maxillary palpi 6-jointed; labial palpi 4-jointed. *Biareolina* Dufour. (= *Callandrena* Ckll.)
4. Thorax above usually with whitish or griseous pubescence, very rarely with a slight ochraceous tinge.
- Labial palpi deformed, the basal joint long and quite different from the last; face in ♀ with blackish hairs; antennae in ♂ longer than the thorax, the apical joints attenuated from the middle. *Rhophtes* Spinola. Labial palpi normal, all the joints being similar and nearly equal; face in ♀ with white hairs; antennae in ♂ as long as the thorax, the last joint acuminate at apex only *Rhophtoides* Schenck. (= *Hesperaspis* Ckll.)
5. Marginal cell at apex more or less acuminate or narrowly rounded, not or rarely truncate, although sometimes appendiculate; mandibles dentate 11
- Marginal cell at apex truncate; mandibles at apex acute or narrowly rounded, not dentate. Front wings with two recurrent nervures 6
- Front wings with only one recurrent nervure, the second obliterated (see below for characters of mouth parts) *Cockerellia* Ashmead (pars).
6. First submarginal cell much longer than the second; maxillary palpi 6-jointed 7
- First submarginal cell equal to or not much longer than the second.
- Maxillary palpi 4-jointed; abdomen black, smooth, shining, bare above, with the sides and fifth segment fimbriate with white hairs; labial palpi 4-jointed, the first joint almost as long as joints 2-4 united. *Scrafter* Lepel. (Type *S. brullei* Lepel.)
- Maxillary palpi 6-jointed; abdomen bare, with white bands; face and clypeus white or with a white spot; second submarginal cell receiving both recurrent nervures; submedian cell considerably shorter than the median *Camptopocum* Spinola. (Type *C. frontale* Spinola.)
7. Species not almost entirely yellow 8
- Species yellow or almost entirely yellow; labial palpi very long, 4-jointed, the first joint fully twice as long as joints 2-4 united. Frontal foveae very distinct, long linear, black; clypeus semicircular at base; claws

simple; pygidial plate almost obtapezoida.

♀. *Philoanthus* Ashm.

(Type *P. beatus* Ckll.)

Frontal foveae very small, represented by a rounded or oval black puncture; clypeus obtapezoidal at base; claws cleft. ♂.

Perditella Cockerell.

(Type *P. larreae* Ckll.)

8. Abdomen aeneous, or rufous and black, ornate with red, yellow, or whitish maculae or bands; face usually yellow, or marked with yellow or white; stigma well developed recurrent nervures respectively interstitial with the first and second transverse cubiti, or both are received by the second submarginal cell 9

Abdomen black, rufous or yellowish, neither maculate nor banded; stigma either large well developed, or poorly developed, sublan- ceolate; both recurrent nervures received by the second submarginal cell or the first is interstitial with the first transverse cubitus. 10

9. Marginal cell not short, much longer than the stigma, fully twice as long, and as long or longer than the first discoidal cell; sub- median cell a little shorter than the median; labial palpi 4-jointed, the first joint very long, 7 or 8 times longer than joints 2-4 united, contracted at base.

Nomadopsis Ashmead.

(Type *C. zonalis* Cr.)

Marginal cell very short, shorter than the stigma or no longer, and always very much shorter than the first discoidal cell; labial palpi 4-jointed, the first joint very long and usually somewhat thickened, fully twice as long or even more than twice as long as joints 2-4 united; hind tibial spurs finely serrated; claws at least in ♂ cleft.

Cockerellia Ashmead.

(Type *P. hyalina* Cr. *albipennis* Cr.)

10. Marginal cell short not longer than the stigma, usually a little shorter, the stigma large, broad well developed; head seen from in front usually longer than wide; clypeus somewhat produced anteriorly, truncate, the

labrum distinct, transverse; labial palpi 4-jointed, the first joint the longest but rarely longer or much longer than joints 2-4 united; claws cleft; hind tibial spurs simple.

Perdita Smith.

Marginal cell long, always much longer than the stigma; stigma rather small, or narrow, lanceolate; head large, seen from in front usually much wider than long; labial palpi 4-jointed the first joint very much longer than joints 2-4 united; claws cleft; hind tibial spurs finely serrated; antennae short, scarcely as long as the width of the head. *Macrotera* Smith.

Stigma broad, oblong-oval or at least not lanceolate; head normal, as seen from in front rounded, not wider than long; antennae longer than the width of the head.

First submarginal cell, along the cubitus, not greatly longer than the second.

Hind tibiae and tarsi in ♀ with a long dense pubescence; clypeus in ♂ black, with long hairs; eyes black; labial palpi 4-jointed, the first joint very long, usually longer than 2-4 united.

Panurgus Latreille.

Hind tibiae and tarsi in ♀ with short, rather sparse pubescence; clypeus in ♂ usually yellow or marked with yellow, hardly pubescent; legs black varied with yellow; labial palpi 4-jointed, the first joint about as long as joints 2-4 united.

Panurginus Nylander = *Parandrena* Robt. = *Pseudopanurgus* Ckll.

First submarginal cell, along the cubitus, about twice or nearly, as long as the second; each submarginal cell receiving a recurrent nervure; transverse median nervure joining the median view much before the origin of the basal.

Scapteroides Gribodo.

11. Submarginal cells very unequal, the first about thrice as long as the second, the latter quadrate or nearly; the first recurrent nervure is received by the first submarginal cell

near its apex, the second, by the second submarginal cell near apex; submarginal cell much shorter than the median; head seen from in front oblong, about twice as long as wide, the eyes fully thrice as long as wide; antennae clavate; mandibles bidentate at apex; maxillary palpi 6-jointed; labial palpi 4-jointed, the first joint the longest.

Hylcosoma Ashm.

Submarginal cells along the cubitus, unequal, the first the longer, the second narrowed one third above; transverse median nervure interstitial; head normal; maxillary palpi 6-jointed; labial palpi 4-jointed, subequal, the joints enlarged at apex; thorax above clothed with a dense pubescence; flocculus on hind tibiae and tarsi long, dense.

Dasyfoda Latreille.

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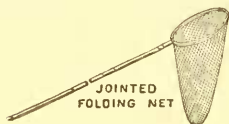
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